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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/006,202	12/10/2001	Christer Andersson	000500-326	2364
7590	02/17/2004		EXAMINER	
BURNS, DOANE, SWECKER & MATHIS, L.L.P. P.O. Box 1404 Alexandria, VA 22313-1404			RO, BENTSU	
		ART UNIT	PAPER NUMBER	
		2837		

DATE MAILED: 02/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Applicant No.	Applicant(s)
	10/006,202	ANDERSSON ET AL.
	Examiner Bentsu Ro	Art Unit 2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 23 December 2003.

2a) This action is FINAL.                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-12 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) 8 is/are allowed.

6) Claim(s) 1-7 and 9-12 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____

**DETAILED ACTION**

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-7 and 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heikkila US Patent No. 5,371,458.

**OR ALTERNATIVELY**

Claims 1-7 and 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heikkila US Patent No. 5,371,458 in view of Lyons et al US Patent No. 5,140,243. (The Heikkila patent was cited by the examiner in the first office action, paper No. 4, and the Lyons et al patent was cited by the examiner in parent application, now US Patent No. 6,339,307. No copy will be provided.)

In the first office action, these claims were rejected as unpatentable over Heikkila's patent. Applicant is therefore referred to the first office action for the details. In the rejection, the examiner has stated that Heikkila's method is applicable to a reluctance machine. In response to the rejection, applicant has amended claim 1 by adding "two mutually movable parts" and "the phase winding having an inductance which depends on the mutual position of the two movable parts". Applicant also

amended claims 11 and 12 in a similar manner. In the remarks, applicant argues that Heikkila's method requires a known stator inductance whereas the amended claims are now claiming an inductance which depends on the mutual position of the moving parts.

Applicant further argues that Heikkila explicitly states that it "relates to a method for determining the stator flux of an asynchronous machine when a stator current and a stator voltage of the asynchronous machine are measured."

These arguments have been fully considered but they are not convincing. First, if the inductance is changed, then for the new inductance, the Keikkila's method is still applicable to calculate the new flux. Why? Because the computation of new flux based on the new inductance by a computer will take not more than a split of a second.

The most important thing to remember is that the method of computation is not changed. The fixed value of inductance or variable value of inductance is immaterial as long as the method is valid.

#### ALTERNATIVELY

Lyons et al use the same equation as that of Heikkila, see Heikkila's equation (3)

$$\Psi = \int(U_s - R_{s1}i_s)dt \text{ or Lyons et al equation (3)} \quad \Psi = \int(V - Ir)dt$$

for calculating the flux if resistance is known or for calculating the resistance if flux is known. This equation is used to calculate the flux of an inductance motor. Of course, the flux depends on the mutual inductance, therefore, a table or a graph can be established for different value or inductance or different value of rotor angle, see Lyons Fig. 2.

3. Claim 8 is allowable.
4. The drawings are missing. Applicant should submit a new set of drawings.
5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication should be directed to Bentsu Ro at telephone number 571-272-2072.



Bentsu Ro  
Senior Examiner  
Art Unit 2837